

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:)	Attorney Docket No. 911568635006
Jon Andersson)	
)	
Application No.: 09/381,899)	
)	
Filed: December 16, 1999)	
)	
For: METHOD AND APPARATUS)	
FOR AUTOMATIC DATA)	
ACQUISITION OF FORMS)	
)	
Examiner: Bieneman, Charles A.)	
)	
Art Unit: 2176)	
)	
Confirmation No.: 4564)	

AMENDMENTS TO THE CLAIMS

Claim 1 (Currently Amended, Previously Amended) A method for automatic data acquisition of forms whose design and informational content is not known in advance, said method comprising the steps of:

providing an unknown form;

generating a form map based on text, designs and colors, if present, on said unknown form for identifying information contained on said unknown form;

searching and comparing said generated form map with stored, registered maps having text, designs and color, if present, in a means for storing form maps;

storing said generated form map in said means for storing form maps when said generated form map does not coincide with a stored map according to predetermined limits for agreement; and

indicating agreement according to the limits for agreement when agreement is found; and

~~continuing data acquisition from said unknown form for identifying informational content on said unknown form.~~

257 Claim 2 (Previously Amended) The method according to claim 1, wherein:
said generated form map includes an object area list with objects contained in said unknown form.

Claim 3 (Cancelled)

Claim 4 (Currently Amended, Previously Amended) A method for automatic data acquisition of forms whose design and informational content is not known in advance, said method comprising the steps of:

providing an unknown form;

generating a form map based on text, designs and colors, if present, on said unknown form for identifying information contained on said unknown form;

searching and comparing said generated form map with stored, registered maps having text designs, and color, if present, in a means for storing form maps;

storing said generated form map in said means for storing form maps when said generated form map does not co-inside with a stored map according to predetermined limits for agreement; and

indicating agreement according to the limits for agreement when agreement is found; and wherein:

~~The method according to claim 1, wherein:~~

said generated form map includes a line map comprising vertical and horizontal line elements from objects of any shape on ~~from~~ said unknown form.

Claim 5 (Previously Amended) The method according to claim 4, wherein:

horizontal line elements in said line map are used to generate a horizontal key by dividing said unknown form into a predetermined number of horizontal segments along a y-axis in a cartographic system of coordinates, wherein each segment is equivalent to one horizontal key position; and

vertical line elements in said line map are used to generate a vertical key by dividing said unknown form into a predetermined number of vertical segments along an x-axis in said cartographic system of coordinates, wherein each segment is equivalent to one vertical key position.

Claim 6 (Cancelled)

Claim 7 (Cancelled)

Claim 8 (Previously Amended) The method according to claim 5, wherein:

said horizontal key and/or said vertical key constitute a line key in the line map, wherein during said searching and comparing step, the key position generated is compared with key positions stored in the means for storing form maps for verifying agreement.

Claim 9 (Previously Amended) The method according to claim 8, wherein:

said key positions are sorted in the storage means according to the number of markings.

Claim 10 (Previously Amended) The method according to claim 2, wherein:

an object's horizontal position in the object area list is used to generate a horizontal key by dividing the unknown form into a predetermined number of horizontal

segments along a y-axis in a cartographic system of coordinates, wherein each segment is equivalent to one horizontal key position; and

an object's vertical position in the object area list is used to generate a vertical key by dividing the unknown form into a predetermined number of vertical segments along an x-axis in said cartographic system of coordinates, wherein each segment is equivalent to one vertical key position.

Claim 11 (Cancelled)

Claim 12 (Cancelled)

Claim 13 (Previously Amended) The method according to claim 10, wherein:

a horizontal key position and/or a vertical key position constitute an object key in the object area list, wherein during said searching and comparing step, the object key generated is compared with object keys stored in the means for storing form maps for verifying agreement.

Claim 14 (Previously Amended) The method according to claim 13, wherein:

the object keys are sorted in the storage means according to a number of markings.

Claim 15 (Previously Amended) The method according to claim 1, wherein:

the searching and comparing step results in a pre-defined number of requested probable candidates for the unknown form; and

manually identifying said unknown form if several alternative candidates are found as probabilities according to a factor of merit.

Claim 16 (Cancelled)

Claim 17 (Cancelled)

Claim 18 (Currently Amended and Previously Amended) An apparatus for automatic data acquisition comprising:

means for scanning an unknown form;

means for generating a form map based on text, designs and colors, if present, on said unknown form for identifying information contained on said unknown form;

means for storing known form maps;

means for searching and comparing said text, designs and colors, if present, on said unknown form map with stored, recognized form maps in said means for storing known form maps;

means for storing generated form maps in the means for storing known form maps when form maps based on unknown forms do not coincide with stored form maps according to predetermined limits for agreement; and

means for indicating agreement according to said limits for agreement when agreement is found; ~~and~~

~~means for identification and continued data acquisition of information contained on said unknown form.~~

Claim 19 (Previously Amended) The apparatus according to claim 18 wherein:

said generated form map includes an object area list with objects contained in said unknown form.

Claim 20 (Cancelled)

Claim 21 (Previously Amended) The apparatus according to claim 18, wherein:

said generated form map includes a line map comprising line elements from said unknown form.

Claim 22 (Previously Amended) The apparatus according to claim 21, wherein:
horizontal lines in said line map are used to generate a horizontal key by dividing
said unknown form into a predetermined number of horizontal segments along a y-axis in a
cartographic system of coordinates, wherein each segment is equivalent to one horizontal key
position; and

vertical lines in said line map are used to generate a vertical key by dividing said
unknown form into a predetermined number of vertical segments along an x-axis in said
cartographic system of coordinates, wherein each segment is equivalent to one vertical key
position.

Claim 23 (Cancelled)

Claim 24 (Cancelled)

Claim 25 (Previously Amended) The apparatus according to claim 22, wherein:
a horizontal key and a vertical key constitute a line key in said line map, and
during searching, the line key generated is compared with line keys stored in said storage means.

Claim 26 (Previously Amended) The apparatus according to claim 25, wherein:
line keys are sorted in the storage means according to number of markings.

Claim 27 (Previously Amended) The apparatus according to claim 18, wherein:
an object's horizontal position in the unknown form in an object area list is used to
generate a horizontal key by dividing the unknown form into a predetermined number of
horizontal segments along a y-axis in a cartographic system of coordinates, wherein each
segment is equivalent to one horizontal key position; and

an object's vertical position in the object area list is used to generate a vertical key
by dividing the form into a predetermined number of vertical segments along an x-axis in said

cartographic system of coordinates, wherein each segment is equivalent to one vertical key position.

Claim 28 (Cancelled)

Claim 29 (Cancelled)

Claim 30 (Previously Amended) The apparatus according to claim 27, wherein:
a horizontal key position and/or a vertical key position constitute an object key in the object area list, wherein during searching, the object key generated is compared with object keys stored in the storage means.

Claim 31 (Previously Amended) The apparatus according to claim 30, wherein:
object keys are sorted in the storage means according to number of markings.

Claim 32 (Previously Amended) The apparatus according to claim 18, wherein:
searching in said searching and comparing means results in a pre-defined number of requested probable candidates for said unknown form; and including
means for manual identification of the unknown form when several alternative candidates are found as probabilities according to a factor of merit.

Claim 33 (Cancelled)

Claim 34 (Cancelled)

Claim 35 (Cancelled)

Claim 36 (Cancelled)

Claim 37 (Cancelled)

Claim 38 (Cancelled)

Claim 39 (Cancelled)

Claim 40 (Cancelled)